



We do the right thing.

Enhanced Chemical Cleaning

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**Enhanced Chemical Cleaning
Project Manager**

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Tank Waste Corporate Board

Provide an overview of the ECC process and plan

Chemical Cleaning

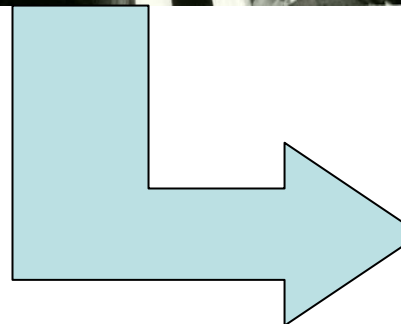
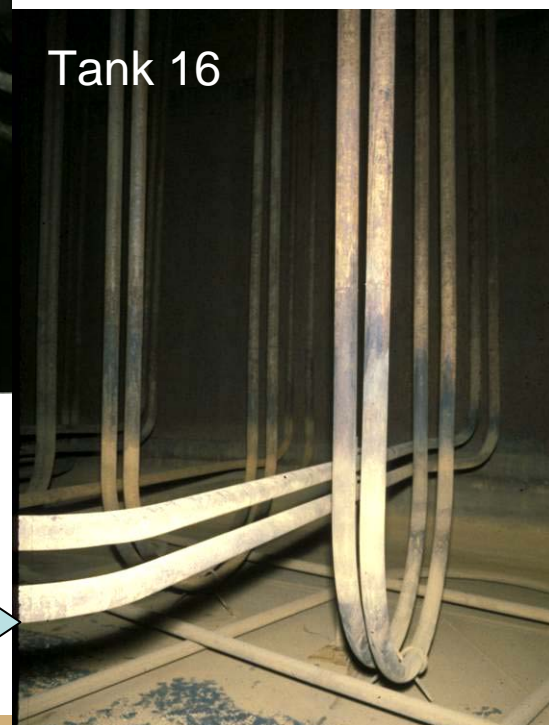
- Oxalic Acid can get tanks clean
 - Tank 16 set a standard in 1982
 - Tanks 5-6 Bulk OA cleaning results under evaluation
- However, the downstream flowsheet and financial impacts of handling the spent acid were unacceptable



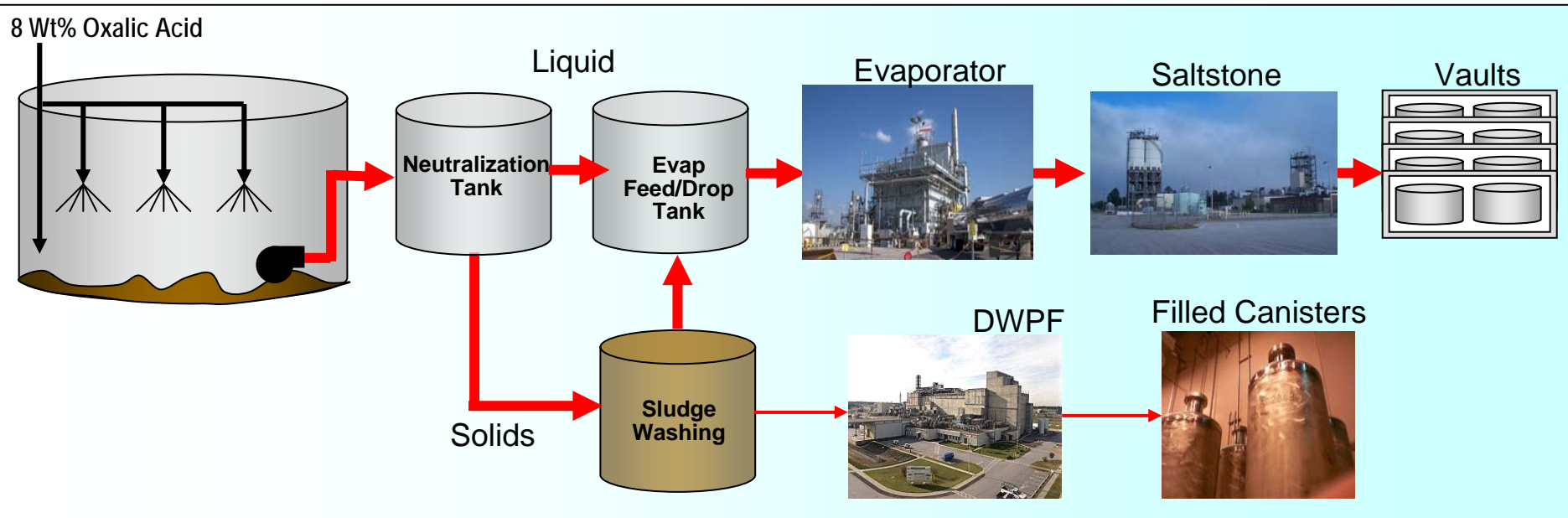
Before



After

Tank 16



Oxalic Acid Flowsheet Impacts



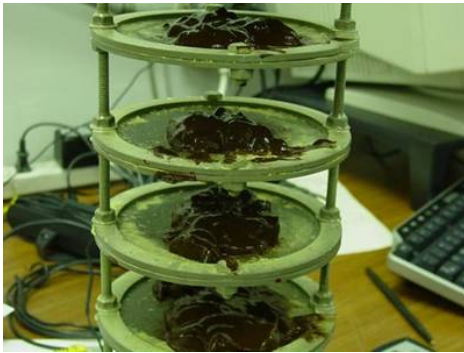
 High oxalate concentration
 Negligible oxalate concentration

- ***Oxalates from chemical cleaning impact salt processing***
- ***A process change was needed***

- Eliminate the impacts to the Tank Farm from spent acid management
- Enable a virtually unlimited use of acid with minimal impacts
- Use a dilute acid process to keep material-at-risk above the tank-top ALARA
- Leverage commercial power industry processes that handle spent oxalic acid solutions
- Use portable, modular, temporary equipment like Waste on Wheels (WOW)

Technology Evaluation

- Identified six nuclear power decontamination technologies with potential applicability
- AREVA's CORD-UV process best fits the vision
 - Oxalates are decomposed by ozone and UV light



200 Grams of Sludge Simulant

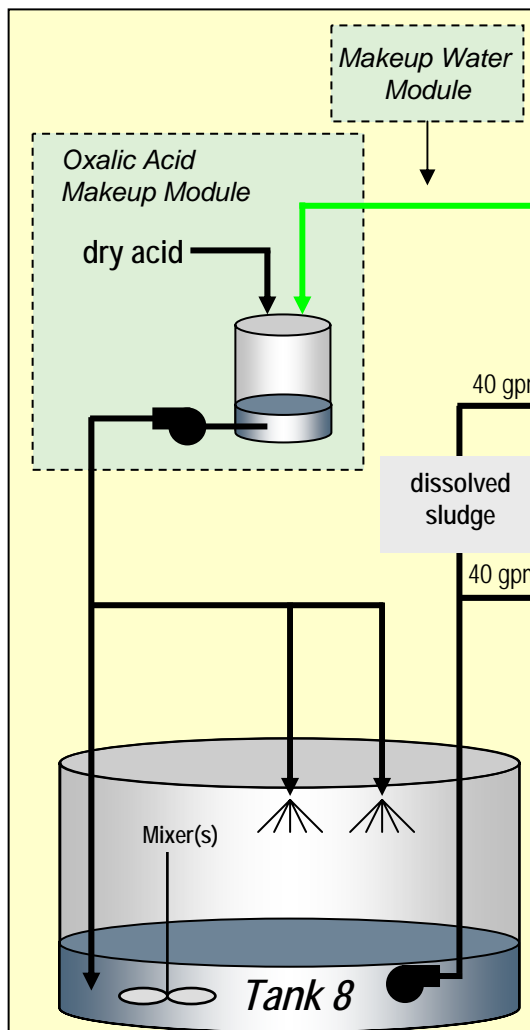


After 6 Hours of Dissolution

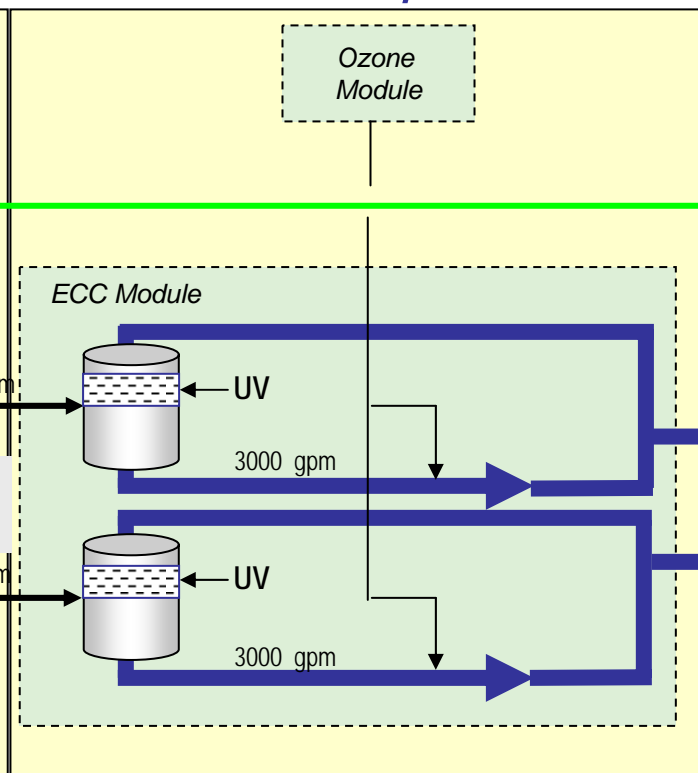


- Confirmed >90% dissolution of the simulant
- Confirmed >90% of the oxalates were destroyed

Dissolution

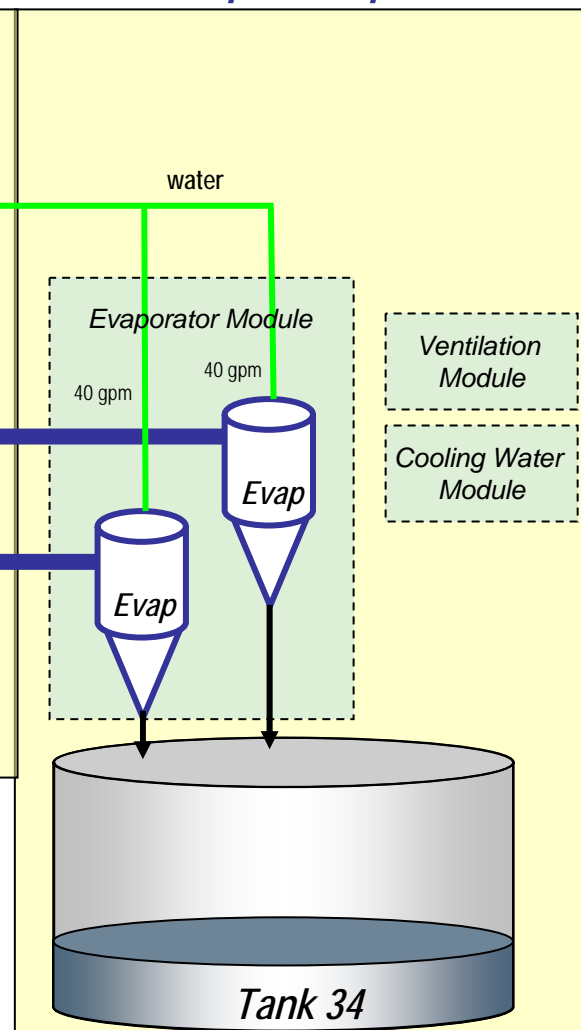


OA Decomposition

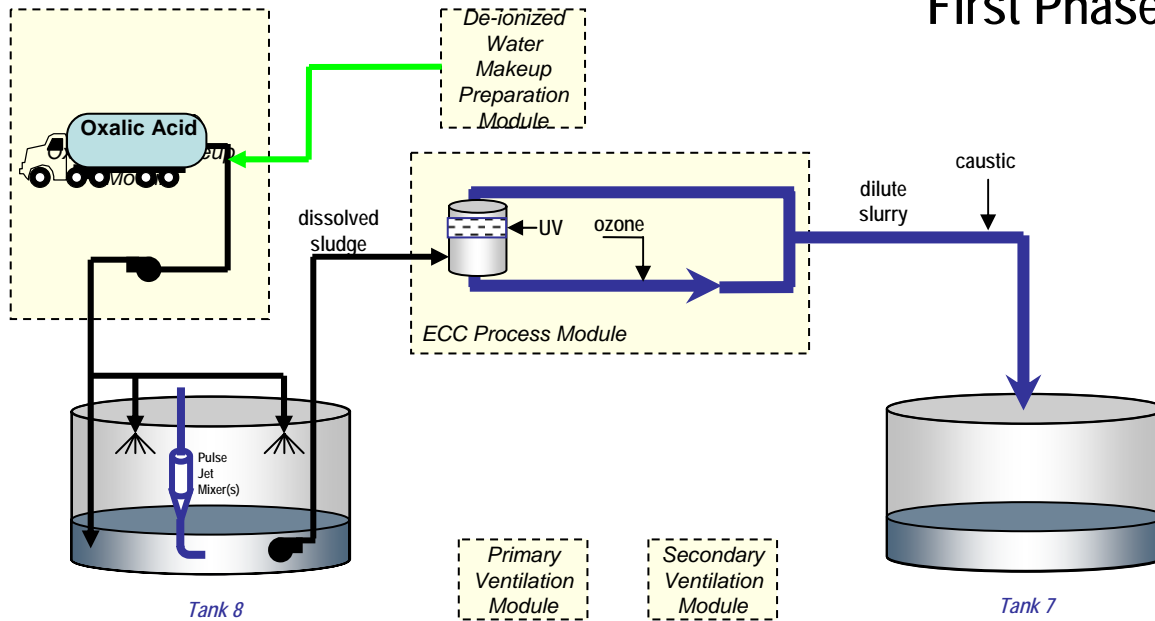


Chemical Cleaning is
complete in 6 months

Solid-Liquid Separation

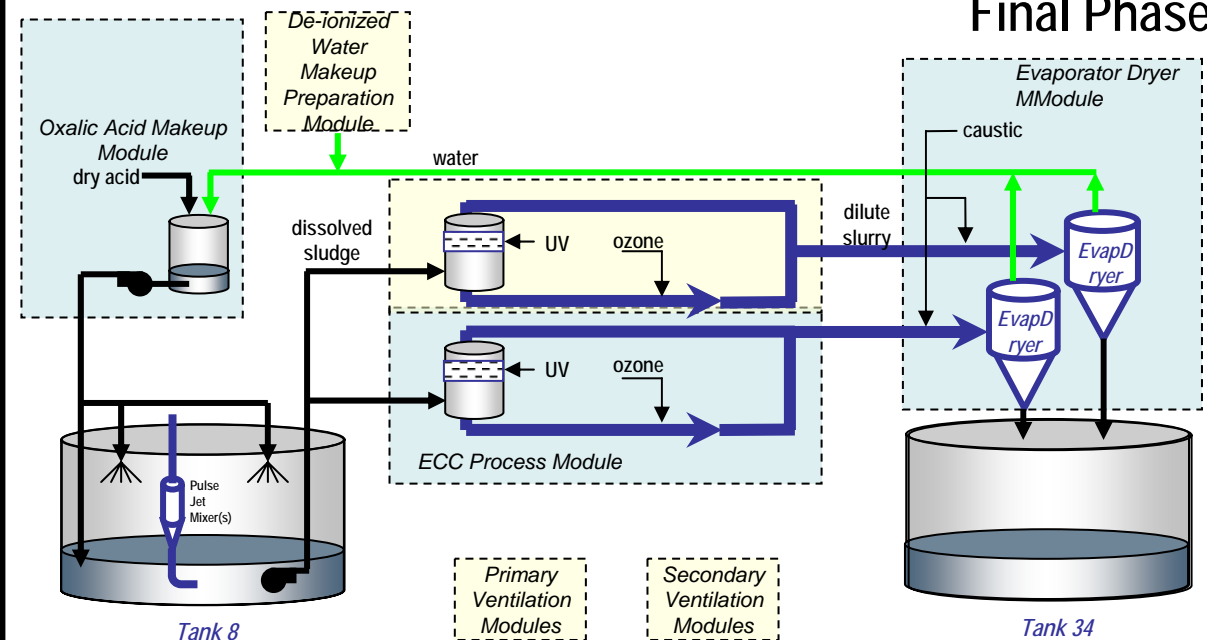


First Phase



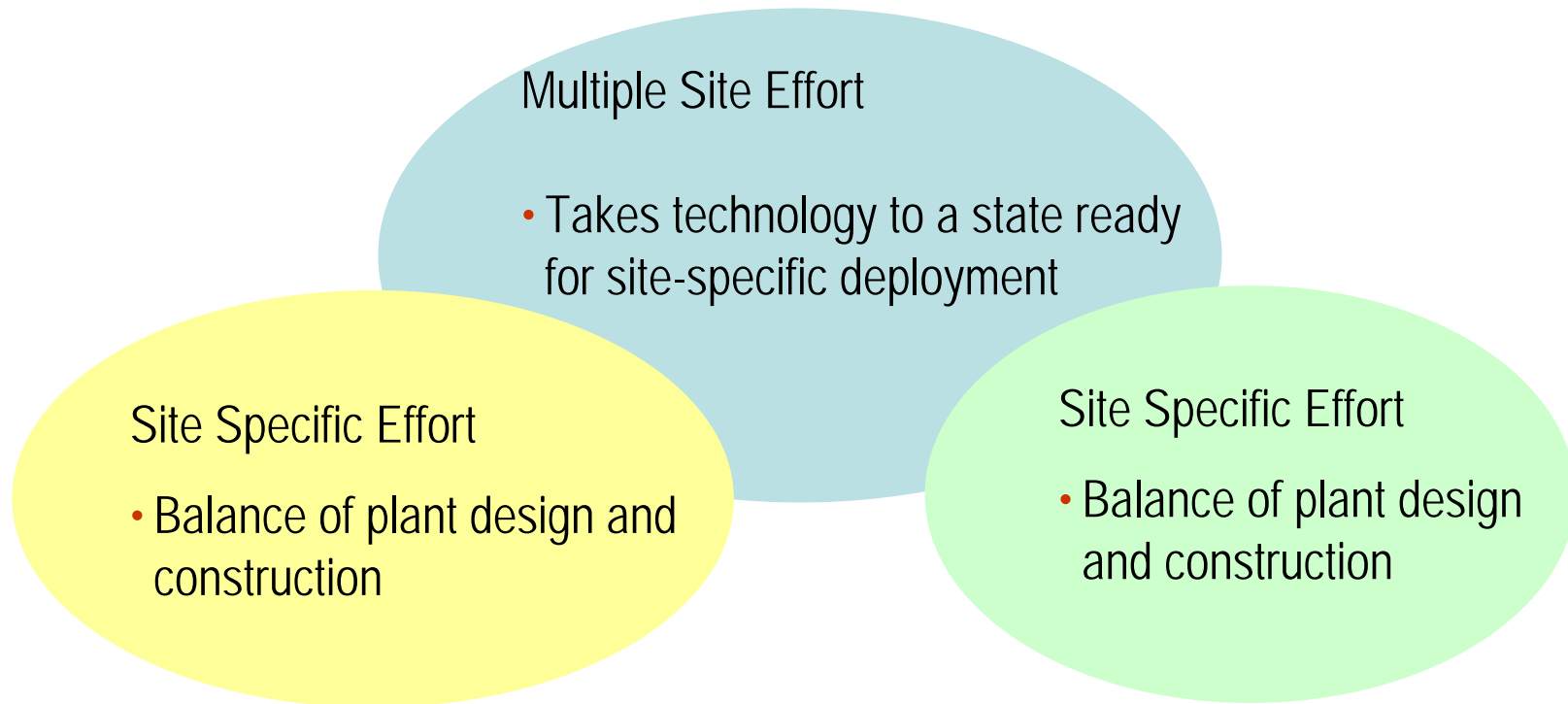
Phased Implementation gets process to the field faster

Final Phase



Multi-Site Project Approach

One site designated as lead to develop technology



Currently evaluating testing for multi-site benefit

- Enhanced Chemical Cleaning
 - solves the life cycle issues of oxalate handling
 - improves the ability to remove sludge heels
 - 2 of 4 tests are complete
 - Results show that the process will be effective
 - Plan for 2010
 - Initiate 2 remaining tests
 - Initiate next phase of design
 - Baseline the project
 - Scope
 - Cost
 - Schedule